DOCUMENT RESUME

ED 027 604 EA 002 030

By-Edwards, Pauline L.; Flexer, Barbara

The Opinions of Ninth Grade Students at Abington High School North Campus about Modular Scheduling. A Report on the Results of a Student Opinionnaire.

Abington High School, Pa. North Campus.

Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.

Report No-DPSC-67-4194; ESEA-Title-3

Pub Date 23 Dec 66

Note-26p.

EDRS Price MF-$0.25 HC-$1.40

Descriptors-*Grade 9, *High School Students, *Program Evaluation, *Schedule Modules, Statistical Analysis, *Student Opinion

As part of an ESEA Title III study of student reaction to modular scheduling at Abington High School-North Campus, 930 ninth grade students completed opinionnaires designed to test the hypothesis that most of the students favor modular scheduling and that there would be no significant differences in terms of sex, ability group, and sending school. The opinionnaires, administered the first week in October, contained 13 opinion statements to which responses were made along a five-point strongly agree-strongly disagree continuum. The internal consistency of the opinionnaire was .74. It was concluded that the majority of ninth grade students, regardless of sex, academic ability, or sending school, were favorably inclined toward modular scheduling. Three recommendations are made: (1) A study of teacher and administrative attitudes toward the modular schedule should be undertaken, (2) a followup study of the same students should be undertaken in May to determine whether significant changes in attitude take place during the year, and (3) the school should continue using the modular schedule. (HW)

DPSC-67-4194
EA
III 4194

THE OPINIONS OF NINTH GRADE STUDENTS AT ABINGTON HIGH SCHOOL NORTH CAMPUS ABOUT MODULAR SCHEDULING

A Report on the Results of a Student Opinionnaire

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

by

Pauline L. Edwards
and
Barbara Flexer

North Campus Research Center

ABINGTON HIGH SCHOOL NORTH CAMPUS

Abington, Pennsylvania
19001

December 23, 1966

EA 002 030

ACKNOWLEDGMENT

As part of a multifaceted examination of the advantages and disadvantages of modular scheduling at Abington High School North Campus, Dr. Allan Glatthorn, Principal of Abington High School, and Roland G. Hughes, Title III Director, designed the student opinionnaire used for this study.

TABLE OF CONTENTS

	Page
Acknowledgment	ii
List of Tables	iv
List of Figures	v
I. THE PROBLEM	
A. Theory, Hypotheses, Definition	1
B. Previous Research	2
II. METHODOLOGY - DATA COLLECTION	
A. Sampling Method	3
B. Experimental Procedures	3
C. Measurement of Variables	3
D. Methods of Analysis, Statistics	4
III. PRESENTATION AND ANALYSIS OF DATA	
A. Percent of the Total Group Responding in Each Category	6
B. Response According to Sex	8
C. Response According to Subjects Studied	9
D. Response According to Sending School	10
E. Figures 1-9	11
IV. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	14
Bibliography	18
Appendix - Forms and Questionnaires Used	A1

LIST OF TABLES

TABLE		Page
I.	THE PERCENT OF THE TOTAL GROUP RESPONDING IN EACH CATEGORY	6
II.	DISTRIBUTION OF SCORES AND MEASURES OF CENTRAL TENDENCY OF THE EXPERIMENTAL SAMPLE GROUPED ACCORDING TO SEX	8
III.	TALLIES AND PERCENT OF BOYS AND GIRLS AT EACH SCORE LEVEL WITHIN THE PARAMETER OF THE DESIGNATED AREA OF UNCERTAINTY	8
IV.	DISTRIBUTION OF SCORES AND MEASURES OF CENTRAL TENDENCY OF THE EXPERIMENTAL SAMPLE GROUPED ACCORDING TO SUBJECTS SCHEDULED	9
V.	TALLIES AND PERCENT OF STUDENTS AT EACH SCORE LEVEL WITHIN THE PARAMETER OF THE DESIGNATED AREA OF UNCERTAINTY - STRATIFIED AS TO SUBJECTS SCHEDULED	9
VI.	DISTRIBUTION OF SCORES AND MEASURES CF CENTRAL TENDENCY OF THE EXPERIMENTAL SAMPLE GROUPED ACCORDING TO SENDING SCHCOLS	10
VII.	TALLIES AND PERCENT OF STUDENTS AT EACH SCORE LEVEL WITHIN THE PARAMETER OF THE DESIGNATED AREA OF UNCERTAINTY - STRATIFIED AS TO SENDING SCHOOL	10

LIST OF FIGURES

FIGURE		Page
1.	A comparison between the percent of boys and the percent of girls in favor of modular scheduling	11
2.	A comparison of the percent of students, grouped according to subjects taken, who are in favor of modular scheduling	11
3.	A comparison of the percent of the students, grouped according to sending schools, who are in favor of modular scheduling	11
4.	A comparison between the percent of boys and the percent of girls not in favor of modular scheduling	12
5.	A comparison of the percent of students, grouped according to subjects taken, who are not in favor of modular scheduling	12
6.	A comparison of the percent of students, grouped according to sending schools, who are not in favor of modular scheduling	12
7.	A comparison between the percent of boys and the percent of girls undecided about modular scheduling	13
8.	A comparison of the percent of students, grouped according to subjects taken, who are undecided about modular scheduling	13
9.	A comparison of the percent of students, grouped according to sending schools, who are undecided about modular scheduling	13

I. THE PROBLEM

A. Theory, Hypothesis, Definition

Theory: Educational requirements of our rapidly changing society place great demands upon the maximum development of the individual student. These demands necessitate operational as well as curriculum changes, so that schools may provide continuing quality education with greater emphasis upon and provision for the varying needs and capabilities of each student.

One operational change designed to meet these demands provides varied learning time geared to the needs and capabilities of the individual student, and is designated as modular or flexible scheduling. Modular (flexible) scheduling, described by J. Lloyd Trump[1] in his booklet "Images of the Future", is an operational procedure which allows larger blocks of time for subject mastery or small increments for individualized learning and independent study.

That modular (flexible) scheduling is an administrative asset is apparent in the many varied types of instructional opportunity that can be offered to the student. This has been attested to by the principals of numerous high schools throughout the country; Poway High School, Poway, California; Mary Potter High School, Oxford, North Carolina; Shawnee Junior High School, Lima, Ohio; and Brookhurst Junior High School, Anaheim, California, were a few of the more than fifty schools using some form of modular scheduling in 1965, whose principals and teachers reported satisfaction with modular scheduling.

That modular (flexible) scheduling is considered a significant educational innovation is attested to by the large number of grants awarded under Title III of ESEA to schools developing modular scheduling programs. A few of these are: Aspen School District, Colorado; Phoenix Union High School, Arizona; Warrensville Heights, Cleveland, Ohio; Independent School District #274, Hopkins, Minnesota; Minneapolis Public Schools, Minnesota; Timberland Regional School District, Plaiston, New Hampshire; San Angelo Independent School District, Texas; Tahlequah Public Schools, Oklahoma; Woodburn Public Schools, Oregon; and Jefferson County School District #R-1, Denver, Colorado.

---

[1] J. Lloyed Trump, "Images of the Future. (Washington, D. C.: National Association of Secondary School Principals, National Education Association, 1959).

Abington High School North Campus, while continuing quality education for its students, is at the same time attempting to maximize individualized learning in a school with a student body of approximately 1900 ninth and tenth grade students. To facilitate individualized learning, North Campus has adopted modular scheduling as one of its educational innovations.

An evaluation of modular scheduling and its contribution to continuous progress through pacing, depth, and breadth of individualized learning, involves examination from three points of view: the administrator, the teacher, and the student.

Hypothesis: This particular study was concerned with examination of modular scheduling from the student's point of view. Our hypothesis was that most students at North Campus would report favorable attitudes toward modular scheduling and that there would be no significant differences in terms of sex, ability group, and sending school.

Definition: Modular scheduling at Abington High School North Campus is defined presently as the division of the school day into the shorter time increments of 23-minute modules, 17 modules a day, and 85 modules a week.

B. Previous Research

Since this study is only a small part of a more comprehensive three-pronged evaluation, a discussion of previous research on the subject of modular scheduling will be included in a final complete report.

Again, since this is a report on only the first of two such surveys of student opinion, research in the area of student opinion of modular scheduling will not be included until the second survey in May, 1967, has been made and evaluated.

II. METHODOLOGY - DATA COLLECTION

A. Sampling Method

Since the adoption of any new operation, such as modular scheduling, creates some unforseen difficulties, we felt that a reasonable amount of time should be allowed for the student to adjust to the new school and its program. The 1966-1967 ninth grade class was selected as the experimental sample for the purposes of this study.

B. Experimental Procedure

During the first week in October the student opinionnaire on modular scheduling (see appendix) was administered to all ninth grade students present, in their respective English Classes. Directions for individual student response were explained by each teacher involved. The students were instructed to leave the opinionnaire unsigned.

C. Measurement of Variables

The opinionnaire was designed to survey not only the opinions of the experimental group as a whole, but also to possibly reveal any significant differences within the experimental group when subdivided as to sex, subjects taken, and sending schools.

It was hoped that the classification as to subject matter might provide a stratified comparison of student opinion according to ability level. It was also hoped that classification of the experimental group by sending school might reveal any significant difference of opinion between students with previous experience with modular scheduling and those with no previous knowledge of, or experience with, modular scheduling.

Assumptions and limitations: No assumptions are made in this survey that the results of this descriptive investigation are applicable to any school system other than Abington. Nor do we assume the absence of the Hawthorne effect on the responses of many of the students.

The study was limited to all ninth grade students attending North Campus for the first time, and present on the day the experimental group was surveyed, 935 of a possible 984. The written directions for student response were concise. Some variability in the verbal instructions given by the teacher may have exercized some influence upon student attitude toward the opinionnaire. However, the

responses seem to show fairly conscientious thought was given to each statement and subsequent response. This could be evidenced by the fact that we found it necessary to discard only five opinionnaires as invalid.

D. Methods of Analysis, Statistics

The data collected were first arranged in an array with the response categories represented by columns, and the corresponding thirteen statements of the opinionnaire represented by rows (TABLE I, Page 6).

The percent of the experimental group (N=930) responding to a particular statement was entered in the proper column or category headed (SA) strongly agree, (a) agree, (?) uncertain, (d) disagree, or (SD) strongly disagree. An item analysis was then made (page 7).

To secure a representation of the relative position of each student with regard to the rest of the experimental sample and their attitude toward modular scheduling, the opinionnaire categories were weighted, suggested by Best[2], 1-5 as follows:

	(SA)	(a)	(?)	(d)	(SD)
Negative (do not like) statements	1	2	3	4	5
Positive (like) statements	5	4	3	2	1

The total number of points on a paper was designated as the student's "attitude" score. Thus, if a student was strongly in favor of modular scheduling, his attitude might be represented by a score of 5 points for each of 13 statements, or a top score of 65 points. If the student strongly disliked modular scheduling, he might check the 1 point category for each statement, thus obtaining the lowest possible score of 13 points.

Since a score of 45 would seem to indicate a greater number of favorable rather than unfavorable or uncertain responses, and a score of 32 would seem to indicate a greater number of unfavorable rather than uncertain responses, the area of uncertainty was considered to be represented by scores lying between 32 and 45, that is $32 < \text{scores} < 45$. (TABLES III, V, and VII, pages 8, 9, and 10)

---

[2]John W. Best, Research in Education (Englewood Cliffs, New Jersey: Prentice Hall, 1959)

The experimental sample was divided into overlapping categories of sex, subject, and sending schools, and the mean, median, standard deviation and interval percentages were found.

Reliability of the Opinionnaire: The reliability of the opinionnaire was checked by the split halves method and corrected by the Spearman-Brown formula, as recommended by Tate[3]. The coefficient of internal consistency was found to be approximately .74 .

---

[3]Merle W. Tate, Statistics in Education (New York, New York: The Macmillan Company, 1955)

III. PRESENTATION AND ANALYSIS OF DATA

TABLE I

THE PERCENT OF THE TOTAL GROUP RESPONDING IN EACH CATEGORY TO EACH STATEMENT

Experimental group number 930

	Response categories				
	SA	a	?	d	SD
	%	%	%	%	%
1. I do not like the modular schedule because there aren't enough periods of regular length.	2.0	4.4	5.1	44.6	43.9
2. I like the modular schedule because the frequent ringing of the bells breaks up the periods.	28.7	36.5	15.7	13.0	6.1
3. I do not like the modular schedule because my schedule is too confusing.	1.9	7.0	5.2	46.8	39.1
4. I like the modular schedule because every day is different.	50.3	36.8	7.7	3.3	1.9
5. I do not like the modular schedule because I can't get a good independent study activity started in a single module.	7.7	18.8	14.6	39.7	19.2
6. I like the modular schedule because I have some short single module classes.	37.2	50.1	6.6	4.3	1.8
7. I do not like the modular schedule because there always seem to be classes passing in the corridors.	3.7	9.7	14.5	47.3	24.8
8. I do not like the modular schedule because the frequent ringing of the bells annoys me.	3.9	6.6	8.2	48.1	33.2
9. I do not like the modular schedule because I have to travel back and forth too much.	11.7	19.7	12.8	36.9	18.9
10. I like the modular schedule because I can do something different every module when I have independent study.	45.5	43.9	5.8	3.6	1.2
11. I like the modular schedule because I have some longer triple module laboratories and shops.	20.9	31.5	20.4	16.5	10.7
12. I like the modular schedule because I get a chance to move around the building more.	20.2	43.6	15.7	15.0	5.5
13. I like the modular schedule because there is less traffic in the corridors at any single time.	11.4	24.2	21.8	21.1	21.5

A. The Percent of the Total Group Responding in Each Category

TABLE I shows that the highest percent of strong agreement was registered for statements #4 and #10.

Statement #4:

I like the modular schedule because every day is different.

Statement #10:

I like the modular schedule because I can do something different every module when I have independent study.

More than 85% of the students appeared to be satisfied with the length of the periods (statement #1), did not seem to find modular scheduling too confusing (statement #3), and apparently felt that the modular schedule made every day different (statement #4).

87.3% of the students seemed to appreciate the short single modules (statement #6), while 89.4% (the highest percentage of agreement) appeared to feel that the modular schedule gave them an opportunity for a variety of independent study activities (statement #10).

Responses to statements #2 and #8 seem to indicate that the majority of students were not disturbed by frequent ringing of the bells.

An average of 12% of the students were uncertain in their responses to each question.

B. Response According to Sex

TABLE II

THE DISTRIBUTION OF SCORES AND MEASURES OF CENTRAL TENDENCY OF THE EXPERIMENTAL SAMPLE GROUPED ACCORDING TO SEX

	Distribution Ranges									Measures of Central Tendency		
Scores	21-25 %	26-30 %	31-35 %	36-40 %	41-45 %	46-50 %	51-55 %	56-60 %	61-65 %	Median	Mean	Std. Dev.
Boys (N=478)	.2	.8	2.5	7.5	15.6	31.1	26.3	11.9	4.1	49	48.98	6.98
Girls (N=452)	.2	1.0	2.8	5.5	14.9	30.0	27.9	14.2	3.5	50	49.36	7.01
Total (N=930)	.2	.9	2.65	6.5	15.25	30.55	27.1	13.05	3.8	50	49.17	6.99
	← unfavorable → 1.1% + 1.06% 2.16%			area of uncertainty 19.40% 32 < scores < 45		← favorable → 3.94% + 74.5% 78.44%						

Analysis of TABLE II: The standard deviations of the distributions show little difference in variability about the respective means of the boys' and girls' distributions. 3.3% more girls than boys more definitely seemed to approve of the modular schedule.

NOTE: Since there were no scores lower than 21, the table begins with the internal column (21-25).

TABLE III

TALLIES AND PERCENT OF BOYS AND GIRLS AT EACH SCORE LEVEL WITHIN THE PARAMETER OF THE DESIGNATED AREA OF UNCERTAINTY

Scores	33	34	35	36	37	38	39	40	41	42	43	44	Total
Boys #	4	2	1	4	5	6	11	14	9	15	13	19	103
%	.8	.4	.2	.8	1.4	1.5	2.4	3.0	1.9	3.1	2.7	4.1	21.5
Girls #	4	2	2	2	3	3	6	6	7	14	12	17	78
%	.8	.4	.4	.4	.7	.7	1.3	1.3	1.5	3.2	2.8	3.5	17.2

Analysis of TABLE III: 4.3% more boys than girls appear to be uncertain in their opinions of the modular schedule.

C. Response According to Subjects Studied

TABLE IV

THE DISTRIBUTION OF SCORES AND MEASURES OF CENTRAL TENDENCY OF THE EXPERIMENTAL SAMPLE GROUPED ACCORDING TO SUBJECTS SCHEDULED

	Distribution Ranges									Measures of Central Tendency		
Scores	21-25 %	26-30 %	31-35 %	36-40 %	41-45 %	46-50 %	51-55 %	56-60 %	61-65 %	Median	Mean	S.D.
Biology (N=188)	0	1.1	4.3	7.5	14.8	28.7	30.3	9.1	4.2	49	48.72	7.14
R. Math (N=253)	.4	1.2	2.1	5.5	16.2	33.6	24.5	12.6	3.9	50	49.09	6.92
M. Math (N=212)	.5	0	1.4	7.1	12.3	30.6	27.4	17.9	2.8	52	49.93	6.62
Other Sub. (N=277)	0	1.4	3.3	6.5	17.3	27.8	26.7	12.6	4.4	49	48.96	7.23

NOTE: Since there were no scores lower than 21, the table begins with the interval column (21-25).

Analysis of TABLE IV: In this distribution by subject little variability about the respective means is demonstrated, the greatest being shown by students taking other subjects and the least being shown by students taking M-Math. However, the median score of the M-Math group is two points higher than that of the R-Math group, and 3 points higher than that of either the Biology or Other Subject groups.

The table as arranged, stratifies the experimental group into an approximately descending order of student academic performance level.

TABLE V

TALLIES AND PERCENT OF STUDENTS AT EACH SCORE LEVEL WITHIN THE PARAMETER OF THE DESIGNATED AREA OF UNCERTAINTY - STRATIFIED AS TO SUBJECTS SCHEDULED

Scores		33	34	35	36	37	38	39	40	41	42	43	44	Total
Biology	#	3	1	1	1	1	2	4	4	3	6	5	12	43
	%	1.6	.5	.5	.5	.5	1.2	2.1	2.1	1.6	3.2	2.7	6.4	22.9
R. Math	#	2	1	1	2	2	2	4	4	5	8	8	6	45
	%	.8	.4	.4	.8	.8	.8	1.6	1.6	2.0	3.2	3.2	2.2	17.8
M. Math	#	0	1	0	1	2	1	4	4	3	5	4	12	37
	%	0	.5	0	.5	.9	.5	1.8	1.8	1.4	2.3	2.0	5.7	17.4
Other Subj.	#	3	1	1	2	3	4	5	6	5	10	8	6	54
	%	1.1	.4	.4	.7	1.1	1.4	1.8	2.2	1.8	3.6	3.1	2.2	19.8

D. Response According to Sending School

TABLE VI

DISTRIBUTION OF SCORES AND MEASURES OF CENTRAL TENDENCY OF THE EXPERIMENTAL SAMPLE GROUPED ACCORDING TO SENDING SCHOOLS

	Distribution Ranges									Measures of Central Tendency		
Scores	21-25 %	26-30 %	31-35 %	36-40 %	41-45 %	46-50 %	51-55 %	56-60 %	61-65 %	Median	Mean	S.D.
Abington Jr (N=197)	1.0	1.0	1.5	8.5	13.5	33.5	25.0	12.5	3.5	50	48.86	7.20
Glenside W. (N=151)	0	.7	2.0	4.7	17.8	29.8	28.4	12.6	4.0	50	49.49	6.55
Huntingdon (N=467)	0	1.1	3.6	6.4	15.0	29.8	27.4	12.8	3.9	49	49.08	7.07
Private (N=25)	0	0	0	8.0	20.0	44.0	16.0	12.0	0	48	48.20	5.49
Other Sch. (N=90)	0	1.2	2.3	6.7	15.6	22.2	29.8	16.6	5.6	53	50.00	7.30

Analysis of TABLE VI: The greatest diversity of opinion seems to be registered by the group of other schools and Abington Junior. The latter group has been exposed to a form of modular scheduling before entering North Campus.

TABLE VII

TALLIES AND PERCENT OF STUDENTS AT EACH SCORE LEVEL WITHIN THE PARAMETER OF THE DESIGNATED AREA OF UNCERTAINTY - GROUPED ACCORDING TO SENDING SCHOOLS

Scores		33	34	35	36	37	38	39	40	41	42	43	44	Total
Abington Jr.	#	1	1	0	1	2	2	4	5	3	5	5	6	55
	%	.5	.5	0	.5	1.0	1.0	2.0	2.5	1.6	2.5	2.5	3.2	17.8
Glenside W.	#	1	0	0	1	1	1	2	2	3	5	5	6	27
	%	.7	0	0	.7	.7	.7	1.3	1.3	1.9	3.3	3.3	4.0	17.9
Huntingdon	#	6	3	3	3	4	4	8	10	8	15	12	19	95
	%	1.4	.6	.6	.7	.9	.9	1.5	2.2	1.5	3.2	2.7	4.1	20.4
Private	#	0	0	0	0	0	0	1	1	1	1	1	1	6
	%	0	0	0	0	0	0	4.0	4.0	4.0	4.0	4.0	4.0	24.0
Other Sch.	#	0	0	0	1	1	1	2	2	1	3	2	4	17
	%	0	0	0	1.1	1.1	1.1	2.1	2.1	1.1	3.2	2.1	4.3	18.2

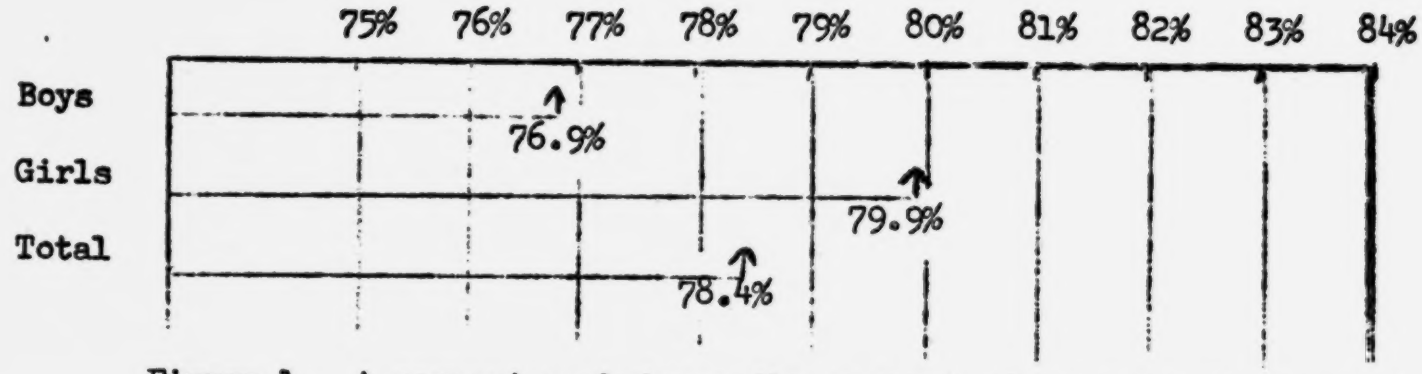

Figure 1. A comparison between the percent of boys and the percent of girls in favor of the modular schedule.

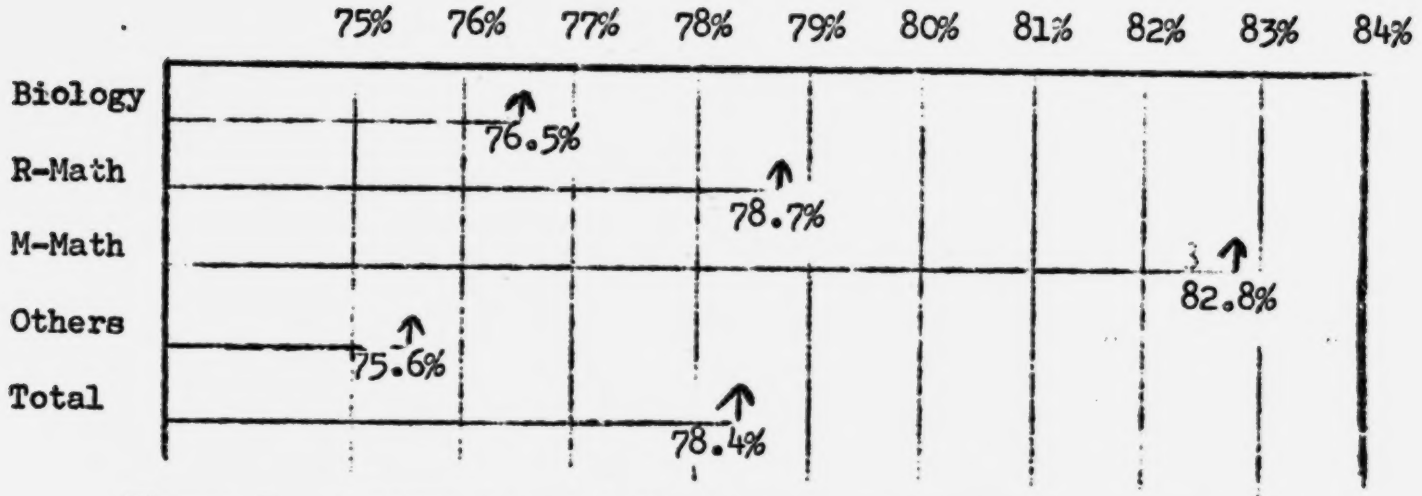

Figure 2. A comparison of the percent of students, grouped according to subjects taken, who are in favor of the modular schedule.

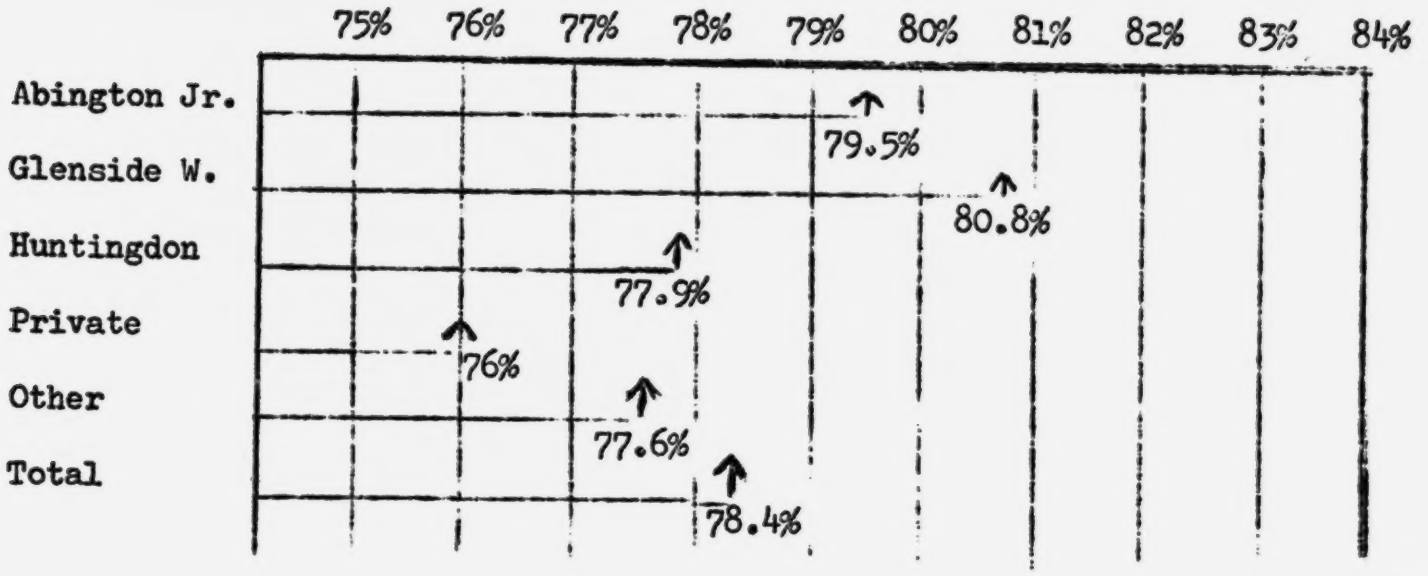

Figure 3. A comparison of the percent of students, grouped according to sending schools, who are in favor of the modular schedule.

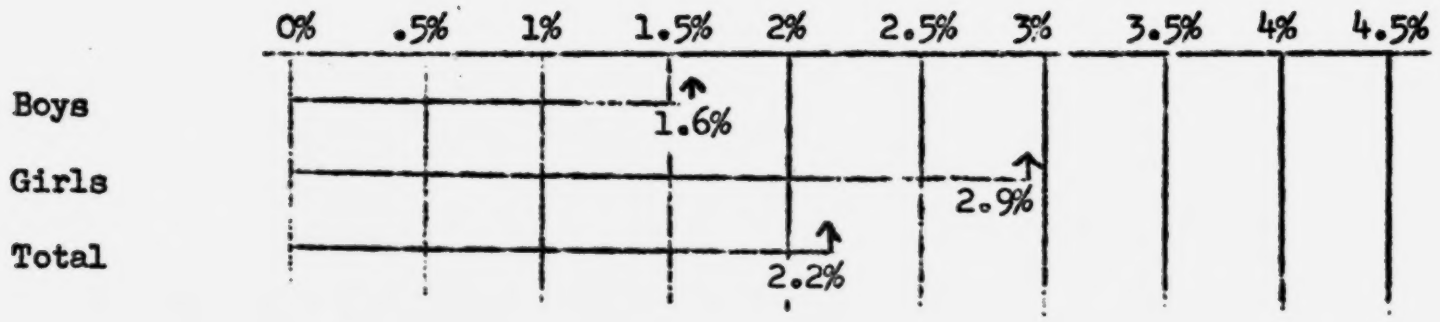

Figure 4. A comparison between the percent of boys and the percent of girls not in favor of the modular schedule.

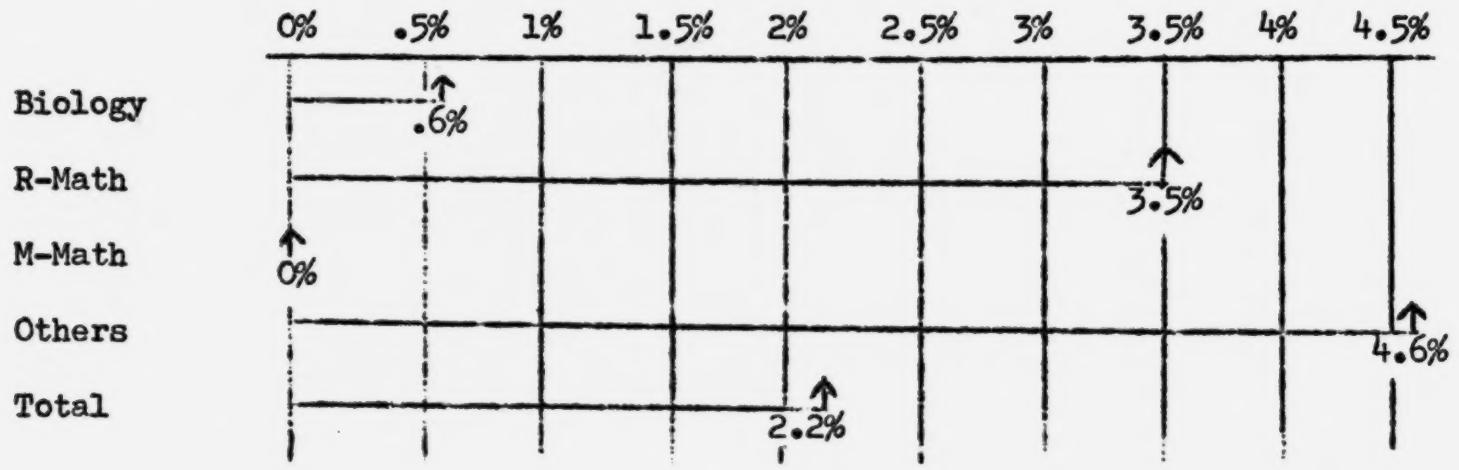

Figure 5. A comparison of the percent of students, grouped according to subjects taken, who are not in favor of the modular schedule.

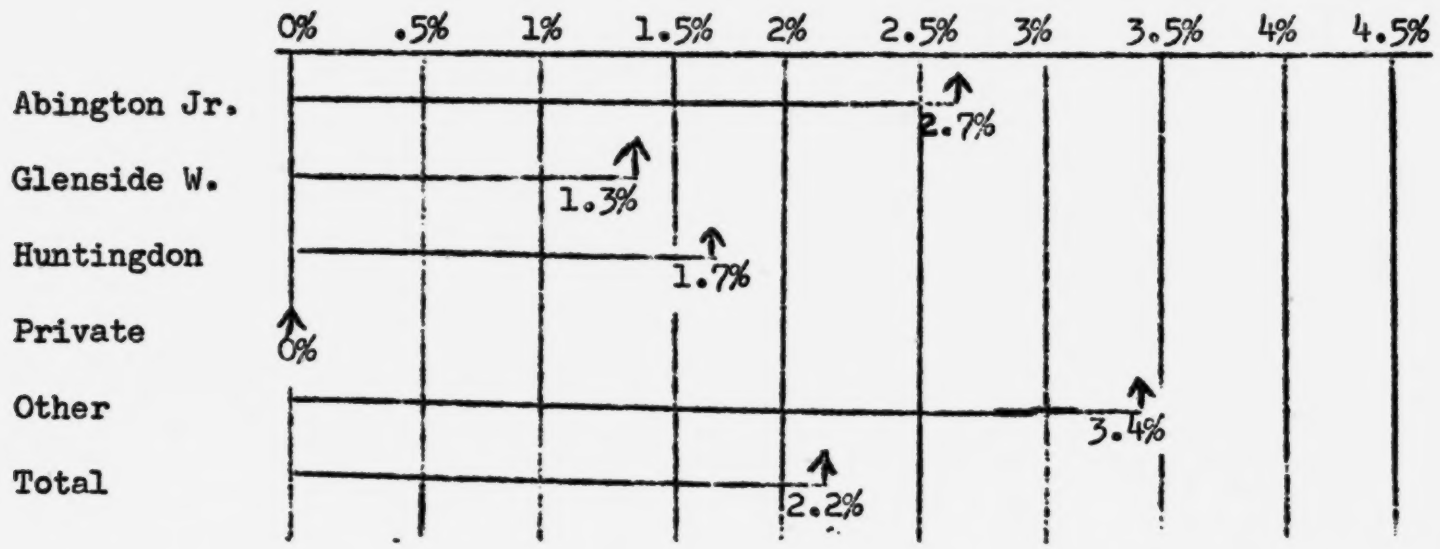

Figure 6. A comparison of the percent of students, grouped according to sending schools, who are not in favor of the modular schedule.

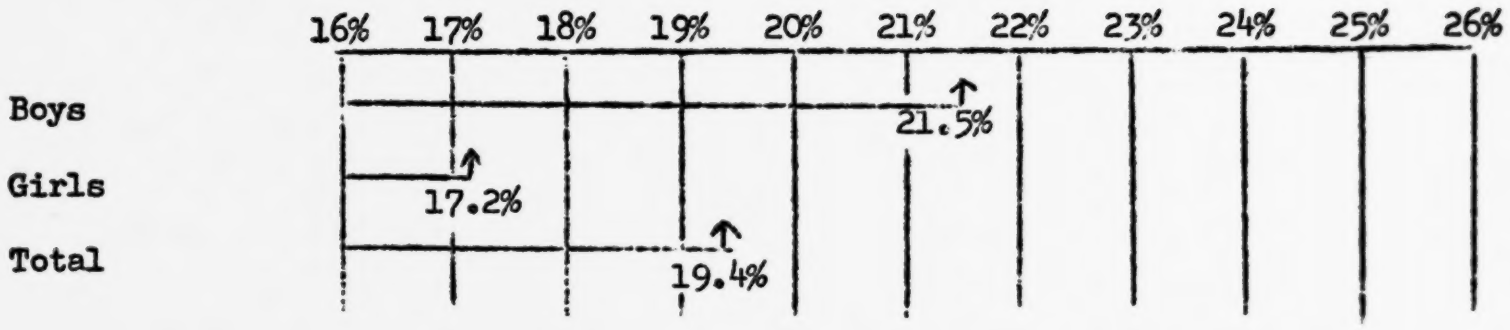

Figure 7. A comparison of the percent of boys and the percent of girls undecided about the modular schedule.

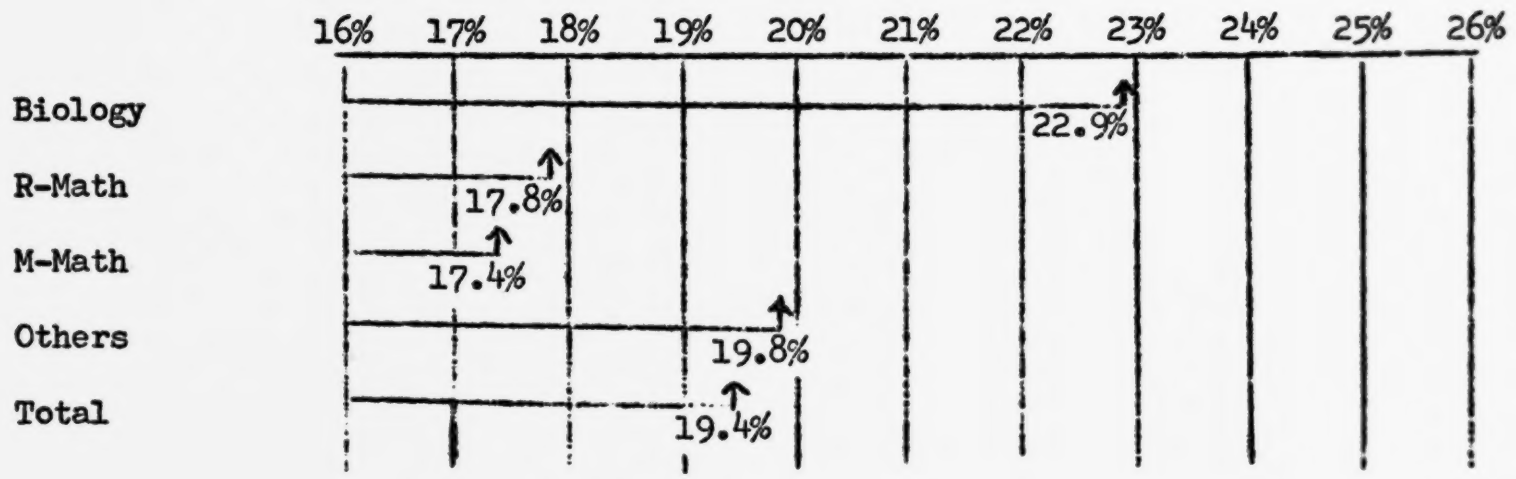

Figure 8. A comparison of the percent of students, grouped according to subjects taken, who are undecided about the modular schedule.

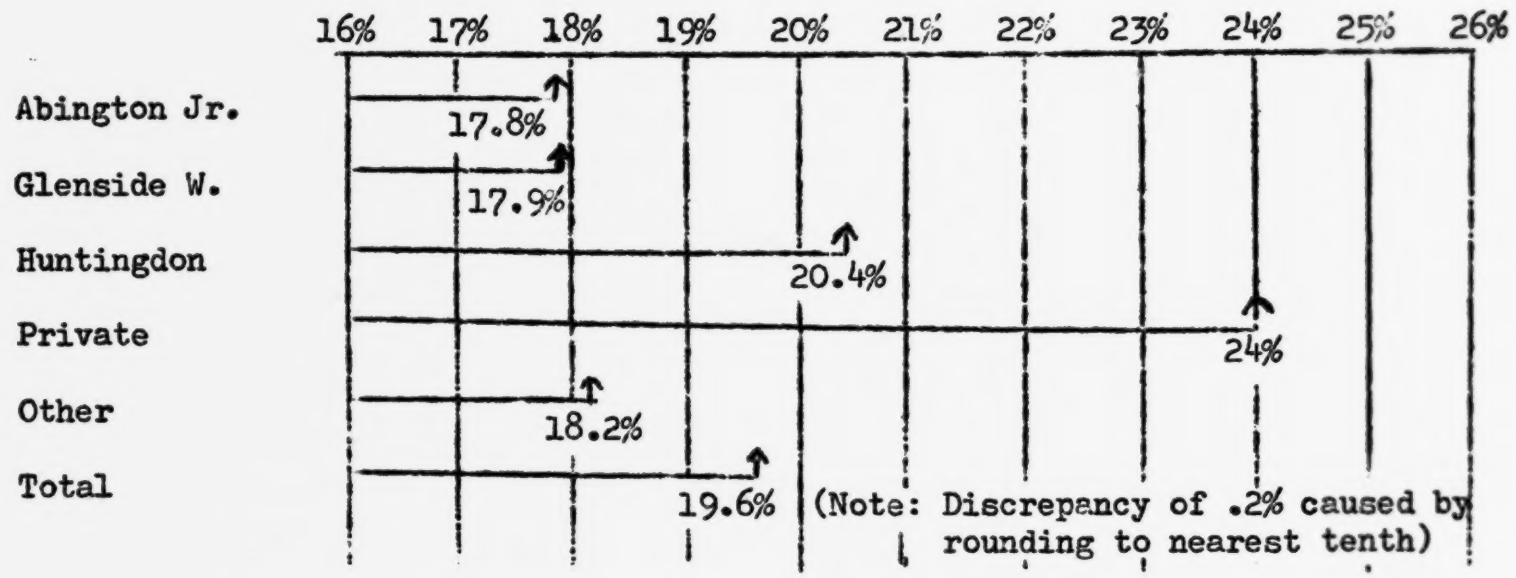

Figure 9. A comparison of the percent of students, grouped according to sending schools, who are undecided about the modular schedule.

IV. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary: In this the first half of a study of student reaction to modular scheduling, data was collected and evaluated to prove or to disprove our hypothesis that: most students at North Campus are in favor of the modular schedule, and that there are no significant differences in terms of sex, ability group, and sending school.

The data was collected through a student opinionnaire drafted by Dr. Allan Glatthorn, Principal of Abington High School, and Roland G. Hughes, Director of Title III. The coefficient of internal consistency of the instrument was found to be approximately .74.

Since the experimental sample selected was the ninth grade class of 984 students, the opinionnaire was given October, 1966, to the 935 students present in their respective English classes. Both written and oral directions accompanied the opinionnaires. The opinionnaires were left unsigned by the students.

The responses to each statement of the opinionnaire were tallied in their respective categories, SA, a, ?, d, and SD. The total response to each statement in each category was then represented as a percent of the experimental sample. The results of this arrangement of the data showed that a great majority of the students (more than 85%) liked the 23 minute module, did not find the schedule confusing, and appeared to enjoy the varying daily schedule changes. More than 80% were not bothered by the frequent ringing of the passing bell. The single module for a variety of individual activities found favor with over 89% of the students.

The longer consecutive modules for large groups, laboratories or more difficult subject matter, while appreciated by more than half of the students, left more than 20% of the group undecided. This could be due in part to the fact that the opinionnaire was given during the fourth week of school and the students were unable, at that early date, to evaluate any benefits derived from the longer modules which are, in many cases, longer than any previous class period to which the student has been accustomed.

There was an evident leveling of opinion in the responses to the statement that the students liked the frequent ringing of the bell because it broke up the periods. This leveling might possibly be attributed to the fact that once the student's schedule was established, he automatically "tuned out" the bells that did not apply to him, thus would not be conscious of any "break" in the period.

A leveling or greater diversity of opinion was again noticeable in the responses to two statements:

#9 - I <u>do not like</u> the modular schedule because I have to travel back and forth too much.

#12 - I like the modular schedule because I get a chance to move around the building more.

This diversity of responses could have been influenced by the greater distances that must be traveled at North Campus as compared to those traveled in the much smaller sending schools.

It is interesting to note the lack of discrimination between the categories in the student responses to statement #13, TABLE I, page 6. This could possibly be attributed to the fact that the responders have not been in a situation where all the students at North Campus have moved from one class to the next simultaneously. Then, too, each student has entered from a sending school whose student population is considerably smaller than that at North Campus, and this might tend to render him unable to exercise proper perspective in his judgment.

To secure the percent of the experimental sample in favor of, not in favor of, and undecided about the modular schedule, the opinionnaire categories were weighted 1-5 for negative statements, and 5-1 for positive statements. TABLES II-VII and Figures 1-9 are based upon the distribution of the resultant "attitude scores." The score interval selected was 5, and this subsequent information was determined:

% Like Mod. S.	% Not Like	% Undecided	Median	Mean	Std. Dev.
78.4	2.2	19.4	50	49.2	6.99

The "area of uncertainty" was designated as the scores falling between 32 and 45 (i.e. $32 < \text{scores} < 45$)

The experimental sample was then grouped according to sex for an opinion comparison, and figures 1, 4, and 7 graphically represent these results. 3% more girls than boys were in favor of the modular schedule, and 4.3% more boys than girls were undecided about the modular schedule.

Again the experimental group was divided, this time according to subjects taken. Graphic representations of these results are to be found in Figures 2, 5 and 8. These Figures illustrated the following:

Subject: (N=Number of Students)		% Like Mod. S.	% Not Like	% Undecided
Biology	(N=188) (representing the top academic students)	76.5	.6	22.9
R-Math	(N=253) (A and B students in the academic track)	78.7	3.5	17.8
M-Math	(N=212) (average or slower learners in the modified track)	82.8	0	17.4
Other	(N=277) (includes all other students)	75.6	4.6	19.8

The experimental sample was further stratified according to sending schools. Figures 3, 6 and 9 represent these results.

Sending School (N=Number of Students)	% Like Mod. S.	% Not Like	% Undecided
Abington Jr. (Had Mod. S.) (N=197)	79.5	2.7	17.8
Glenside W. (N=151)	80.8	1.3	17.9
Huntingdon (N=467)	77.9	1.7	20.4
Private Schools (N=25)	76.0	0	24.0
Other Schools (N=90)	77.6	3.4	18.2

Conclusions: It would appear from the foregoing assembled data, that at the time this opinionnaire was administered, the majority of ninth grade students regardless of sex, academic ability, or sending schools were favorably inclined toward the modular schedule.

Recommendations:

1. It is recommended that a study of teacher and administrative attitudes toward the modular schedule be undertaken.

2. It is recommended that a follow-up study of these same ninth grade students be undertaken in May of the present school year in order to determine whether significant changes take place in attitude during the course of a year.

3. Since the modular schedule was devised by faculty and administration for instructional reasons and since the schedule seemingly has the strong endorsement of the 9th grade students, it is recommended that the school continue using the modular schedule.

BIBLIOGRAPHY

BIBLIOGRAPHY

Articles

Allen, Dwight W., "First Steps in Developing a More Flexible Schedule," NASSP Bulletin, 46:34-36, May, 1963.

Bush, Robert N., "New Developments in Flexible Daily Time Schedules," NASSP Bulletin 45:296-299, April, 1961.

Symposium: "Flexible Scheduling: An Appraisal to Individualizing Instruction in Secondary Schools," Journal of Secondary Education, 36:336-384, October, 1961.

Trump, J. Lloyd, "New Directions in Scheduling and Use of Staff in the High School," California Journal of Secondary Education, 33:362-372, October, 1958.

Trump, J. Lloyd, "Flexible Scheduling: Fad or Fundamental," Phi Delta Kappan, 44:367-371, May, 1963.

Yerby, Robert M., "Flexible Scheduling: Some Critical Questions and an Experiment," Journal of Secondary Education, 37:197-200, April, 1962.

Books

Beggs, David W. III, Decatur-Lakeview High School: A Practical Application of the Trump Plan, Englewood Cliffs, N. J., Prentice-Hall, Inc., 1964, 260 pp.

Beggs, David W., and Edward G. Buffie, eds., Independent Study: Bold New Venture, Bloomington, Indiana University Press, 1965, 228 pp.

Best, John W., Research in Education, Englewood Cliffs, N. J., Prentice-Hall, 1959, 320 pp.

Bush, Robert N., and Dwight W. Allen, A New Design for High School Education: Assuming a Flexible Schedule, New York, McGraw-Hill, 1964, 187 pp.

Manlove, Donald C., and David W. Beggs, III, Flexible Scheduling: Bold New Venture, Bloomington, Indiana University Press, 1965, 184 pp.

Tate, Merle W., Statistics in Education, New York, Macmillan Co., 1955, 597 pp.

Trump, J. Lloyd, Images of the Future, Washington, D.C., NASSP, NEA, 1959.

Publication

Pacesetters in Innovation, U.S. Dept. of Health, Education, & Welfare.

APPENDIX

9th Grade Students

OPINIONS ABOUT THE MODULAR SCHEDULE
AT NORTH CAMPUS

(Read silently while your AR teacher reads outloud.)

The following questionnaire has been prepared to survey your opinions of our modular schedule. We would like you to read and think carefully. Then answer each item based upon your impressions of, and experiences with, the schedule so far this year.

These items relate only to the modular schedule (that is, how time is divided with a 23-minute module, 17 modules a day, and 85 modules a week). Answer items in terms of your whole schedule.

It is important that you seriously consider each items. We value the opinions of students here at North Campus. Your opinions will be helpful only to the extent that you are fair, frank and honest.

The statements on the next page represent varying opinions about the North Campus modular schedule. Read each statement and indicate the extent to which you agree or disagree. Answer each item by drawing a circle around your choice as described below.

If you strongly agree, encircle SA.....SA a ? d SD
If you just agree, encircle a .....SA a ? d SD
If you are undecided or uncertain, encircle ?....SA a ? d SD
If you disagree, encircle d .....SA a ? d SD
If you strongly disagree, encircle SD .....SA a ? d SD

Advisor Room _____
Check: Male_____ Female_____
Check one of the spaces below depending on your courses:

____ I have Biology.
____ I have R Math, Earth-Space Science, and Foreign Language
____ I have M Math, Earth-Space Science, and no Foreign Language
____ I have some other combination of subjects.

Check one of the spaces below depending on the school you attended in 8th grade:

____ Huntingdon Junior
____ Abington Junior
____ Glenside-Weldon
____ Private School
____ Some other school

1.	I do not like the modular schedule because there aren't enough periods of regular length.	SA	a	?	d	SD
2.	I like the modular schedule because the frequent ringing of the bells breaks up the periods.	SA	a	?	d	SD
3.	I do not like the modular schedule because my schedule is too confusing.	SA	a	?	d	SD
4.	I like the modular schedule because every day is different.	SA	a	?	d	SD
5.	I do not like the modular schedule because I can't get a good independent study activity started in a single module.	SA	a	?	d	SD
6.	I like the modular schedule because I have some short single module classes.	SA	a	?	d	SD
7.	I do not like the modular schedule because there always seem to be classes passing in the corridors.	SA	a	?	d	SD
8.	I do not like the modular schedule because the frequent ringing of the bells annoys me.	SA	a	?	d	SD
9.	I do not like the modular schedule because I have to travel back and forth too much.	SA	a	?	d	SD
10.	I like the modular schedule because I can do something different every module when I have independent study.	SA	a	?	d	SD
11.	I like the modular schedule because I have some longer triple module laboratories and shops.	SA	a	?	d	SD
12.	I like the modular schedule because I get a chance to move around the building more.	SA	a	?	d	SD
13.	I like the modular schedule because there is less traffic in the corridors at any single time.	SA	a	?	d	SD